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An Empirical Pilot Study Examining the Relationship Between Intention to Participate in Food Security Efforts and Childhood Socioeconomic Status Among Conference Attendees

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AN EMPIRICAL PILOT STUDY EXAMINING THE RELATIONSHIP BETWEEN INTENTION TO PARTICIPATE IN FOOD SECURITY EFFORTS AND CHILDHOOD SOCIOECONOMIC STATUS AMONG CONFERENCE ATTENDEES

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Abstract

Hunger is a global public health issue and finding a solution is a priority for the United Nations. The United Nations Sustainable Development Goal 2.2 calls for ending hunger, achieving food security, improving nutrition and promoting sustainable agriculture for all people by 2030. The Universities Fighting World Hunger (UFWH) Summit, originating with the United Nation's originated World Food Programme (WFP) and Auburn University, convenes attendees annually to share their own knowledge and ideas about how to "fight hunger," as well as benefit from others knowledge and ideas. An important factor in tackling hunger and achieving health is addressing poverty and low socioeconomic status (SES). Due to the profound impact SES has on all aspects of life (including neuroscience) at all ages, the current study has two research objectives: 1) to examine if there is a relationship between childhood SES of UFWH Summit attendees (n=16) and their intention in adulthood to participate in food security in their community, and 2) to examine if there is a relationship between childhood SES of UFWH Summit attendees and their knowledge of food security initiatives. The current study found no significant differences in means between high childhood SES group and low childhood SES group when asked about their intentions to participate in their community within the next 6 months. One item in the knowledge portion of the study (Campus food recovery efforts) showed a significant difference in means (p=0.048). This trend indicates a need for further exploration in future studies. It is recommended to continue the research into these topics with a larger sample size to understand more about how childhood socioeconomic status may influence intentions in participate in community efforts into adulthood. Repeating this study and similar studies in advocacy-driven conference settings will help us better understand the individuals that attend these conferences and how to improve the conference content in order to increase advocacy for public health and participation in the future.

Introduction

Inadequate access to safe and nutritious food is a world-wide critical public health issue. In 2015, approximately 784 million people were undernourished, in 2017, that number rose to an estimated 821 million people (Report of the Secretary-General, 2019). Approximately more than 2 billion experience important micronutrient deficiencies (e.g. vitamin A, iron, zinc) and other consequences such as stunting and wasting (Pérez-Escamilla, 2017). When 134 countries were examined using The Food Insecurity Experience Scale from the Food and Agriculture Organization (FAO), the results showed that all countries exhibited some degree of food insecurity, from 10.8% of individuals in high-income countries to 56.5% of individuals in low-income countries (Smith, Rabbitt, & Coleman- Jensen, 2017). Africa continues to be the continent with the most need for intervention, as one fifth of its population is undernourished (Report of the Secretary-General, 2019). This problem is seen in the United States and even seen on college campuses – an environment perceived to have an abundance of resources. A study examining eight U.S. universities found that 19% of first year students are food insecure and 7.1% experience severe food insecurity (El Zein et al., 2019). Undernourishment is an internationally recognized concern and has been once again listed as a top priority for the United Nations. The second United Nations Sustainable Development Goal calls for ending hunger, achieving food security, improving nutrition and promoting sustainable agriculture for all people by 2030 (Report of the Secretary-General, 2019).

In order to create more opportunities for a multidisciplinary approach to "fight hunger," the United Nation's World Food Programme (WFP) partnered with Auburn University in 2004 and developed the Universities Fighting World Hunger (UFWH) Summit (Auburn University, n.d.). Since the first UFWH Summit in 2006, approximately 500 student leaders, professionals, and

advocates from around the world gather annually to discuss the global sustainability issues and stimulate student awareness about hunger as a critical global issue. Though the UFWH Summit is primarily under Auburn leadership, it is organized and hosted by a different university each year, effectively expanding its attendee base. This conference convenes attendees to share their own knowledge and ideas, as well as benefit from others knowledge and ideas. By targeting university students, UFWH is creating a new cohort of globally aware and socially engaged advocates each year to contribute to the conversation and find ways to support the "war on hunger" (Auburn University, n.d.). The UFWH Summit in 2020 is centered around three tracks – food security research and programs on global, domestic, and campus scales. The following cross-sectional study will survey the UFWH Summit 2020 attendees to investigate their current knowledge of food security efforts as well as their intentions to participate in food security and poverty efforts in their community.

Background

Some common terms used in dietetics and nutrition research are 'hunger,' 'famine,' and 'food insecurity.' There are notable marked differences in these terms. Food insecurity refers to the lack of regular access to enough safe and nutritious food for healthy growth, development, and an active life (Food and Agriculture Organization of the United Nations, 2008). 'Hunger,' also referred to as 'undernourishment,' refers to an uncomfortable or painful sensation as a result of insufficient dietary consumption ("Hunger and food insecurity," n.d.). Moderate food insecurity significantly increases the risk of hunger and severe food insecurity leads to hunger. Famine, the most extreme case of food insecurity, is an epidemic that occurs when there is a widespread scarcity of food, resulting in the malnutrition and starvation of entire populations, leading to increased mortality (Glantz, 1997). Though the conference being evaluated is the Universities

Fighting World *Hunger* Summit, the term food security will be used in this study in order to encompass a larger population and more prevalent issue, while still including those who face hunger.

Determinants of Health

Healthy People 2020 identifies five determinants of health domains: economic stability, (poverty, housing instability, food insecurity), education (childhood education and early development, high school graduation, enrollment in higher education, language, literacy), social and community context (civic participation, discrimination, incarceration, social cohesion), health and healthcare (access to healthcare, access to primary care, health literacy), and neighborhood and built environment (access to foods that support healthy eating patterns, crime and violence, environmental conditions, quality of housing) ("Social Determinants of Health," n.d.). Although the topic of food insecurity is listed as a factor of economic stability, it has a place in all the other domains. Addressing these five determinants of health is a multidisciplinary effort, reaching beyond the health care and public health boundaries to include sectors such as education, housing, transportation, agriculture, and environment ("Social Determinants of Health," n.d.).

The five determinants of health will be successfully addressed when complete health equity is attained. Health equity, characterized as 'social justice in health,' is a concept in the public health that aims to identify social and economic factors of health and ensure consistent opportunity to attain optimal health (Weiler et al., 2015). Ensuring food security for all individuals in a population is an important component to achieving health equity.

Socioeconomic Status and Health

At the individual level, the five domains of the social determinants of health are interrelated with one another through socioeconomic status (SES). SES plays an important role on an

individual's overall health and wellbeing. SES, typically measured by family income, parental education, and occupational status compared to others, is a construct in social science that has been widely researched for years and has consistently been named as the influencer of health factors such as every day stress, neighborhood quality, physical health, mental health, and even cognitive ability (Hackman & Farah, 2009). However, because it can be challenging to measure individual SES data by salaries or wages, SES is also commonly measured in terms of social factors (such as educational attainment, occupational status, or neighborhood characteristics) which are more easily recalled (Farah, 2017). SES has a particularly profound effect on the health, cognitive, and socioemotional outcomes of children – likely due to the presence or absence of material and social resources to stress-inducing conditions (Bradley & Corwyn, 2002). For example, a family with limited financial resources may abstain from seeking medical care for someone in the household, purchasing prescription medications, or purchasing healthy fruits and vegetables in order to allocate their income toward rent or utilities instead. While there are many individual outcomes as a result of SES, potentially the greatest impact on an individual is the population level outcomes of SES. Communities where people reside reflect their income. A low income community may not have public health programs, fresh food, or readily available healthcare, resulting in a high prevalence of disease (Alderman & Garcia, 1994).

Childhood Socioeconomic Status

Socioeconomic status is an important indicator of health and wellbeing. This is true for not only those that are earning an income, but the children of those earning the income as well. A study by Schmeer and Yoon that assessed how a low childhood SES is associated with low-grade inflammation, a "biomarker of chronic stress exposure," found that low parental education and family income were strongly associated with increased production of proinflammatory cytokines

circulating in the blood in early childhood (Schmeer & Yoon, 2017). While this study only assessed the effect of a low SES on stress by inflammation in early childhood, some studies suggest that socioeconomic status in childhood can carry its weight well into adulthood. One retrospective study reported a positive association between childhood SES and executive function in the brain up to 25 years of age, while another found a significant associated between childhood social class and mean-level cognitive performance at 65 years of age (Last, Lawson, Breiner, Steinberg, & Farah, 2018) (Ericsson et al., 2017). Due to the profound impact SES has on all aspects of life (including neuroscience) at all ages, the current study seeks to examine if there is a relationship between childhood SES and willingness or intention to participate in food security initiatives that may not have any immediate benefit to the individual, but support the health of the population. SES as well as FI affect many aspects of an individual and community. The path to a healthier population lies in the dissemination of ideas that will help the disadvantaged populations and create health equity. This is what the UFWH Summit, and similar conferences, intend to do.

Disseminating Ideas Through Conferences

Practice informs research just as research informs practice (Mata, Latham, & Ransome, 2010). It is especially important for students to attend and actively participate in professional conferences. Attending professional conferences is a significant component of career development, particularly in the health promotion and education practices because these fields value interdisciplinary collaboration for their success (Mata et al., 2010). Attendance at conferences such as the UFWH Summit have many benefits such as experience with diversity, improving research and advocacy skills, inter- and intradisciplinary collaboration, public speaking experience, networking, mentoring, socializing, and professional development (Mata et al., 2010).

These experiences and newly developed skills are the foundation of effective advocacy that translates into more effective solutions for public health initiatives.

Policy as a Result of Advocacy

Advocacy has historically played a strong role in policy development as public health advocates take advantage of legislative action in order to suggest laws and regulations focused around public health and molded with research (Freudenberg, 2005). A few examples include how health organizations and allies persuade lawmakers to raise tobacco and junk food tax, regulate fuel-inefficient cars, and set standards on advertising health-damaging products (Freudenberg, 2005). The health promotion that advocacy provides is for overcoming major barriers to the social determinants of health. Legislation, regulations and other policy decisions may not reflect what is best for the public's health in the absence of public health advocacy. In the same respect, public policy is well entangled in the multidisciplinary and multi-sectoral issue of food insecurity. Food insecurity affects almost every level of society, therefore this public health concern has consistently been an important topic on the minds of policy makers, practitioners, and academics around the world (Jones, Ngure, Pelto, & Young, 2013). The Universities Fighting World Hunger Summit seeks to create a climate that fosters advocacy in attendees.

There is currently no documentation of the characteristics or interests of those that attend the Universities Fighting World Hunger Summit each year. In an effort to learn more about the typical UFWH attendee and gain valuable information to improve upon future Summits and similar conferences, the following cross-sectional study will survey the attendees' participating in the Universities Fighting World Hunger Summit in 2020.

The primary objective of this study is to examine if there is a relationship between childhood socioeconomic status and the intention of engaging in community food security efforts in

conference attendees. Therefore, the research question for this empirical study is as follows: What is the relationship between childhood socioeconomic status and the intention of the conference attendee to participate in community food security efforts/organizations? The secondary research objective for this study is to examine the relationship between childhood socioeconomic status and knowledge of existing food security resources on campus, domestic, and global scales. The current hypothesis regarding the primary research question is that there is a relationship between childhood socioeconomic status and intention of the attendee to participate in food security efforts in their community. The secondary hypothesis is that there is a relationship between childhood socioeconomic status and the attendees' knowledge of food security resources in adulthood.

Methods

Study Design

A cross sectional, observational baseline survey created for attendees of a hunger/food security conference was collected. Though it was not necessary for the scope of the current study, IRB approval was sought out to make the information publishable. This study was submitted to the University of Kentucky Office of Research Integrity for IRB review under the "Exemption," protocol process on the grounds that the research was conducted in an educational setting and involves educational practices that are not likely to adversely impact opportunity to learn or the assessment of educators. Additionally, the information was obtained for this research in a manner that the identity of the subjects ill not be readily ascertained. Due to changes in conference format, this study (IRB protocol #: 53766) did not receive prompt approval from the UK IRB, therefore excluding it from the possibility of being published. Subjects were, however, provided an informed consent form before taking the survey that states the purpose of the study and that information collected will be used only for this capstone project and will serve as baseline data for future

UFWH Summits. Participants who went on to take the questionnaire thereby consented to the findings being used in the current study (Appendix 1).

Participants

To address research objectives 1 and 2, the knowledge and intentions of a convenient sample of conference attendees who self-selected into the research was measured. Subjects self-selected into the study by volunteering to complete a questionnaire. Attendees were invited to take part in this questionnaire three times: 1) via email before the conference, 2) verbally during the conference, and 3) a reminder email upon conclusion of the conference. Inclusion criteria for this research include that the individuals be above 18 years of age and attended the virtual conference on March 19, 2020. Exclusion criteria included that the individuals are under 18 years of age or did not attend the conference on March 19, 2020. The estimated 300 that individuals registered to attend the in-person version of the conference received an email that invited them to participate in the survey. Due to unforeseen circumstances surrounding the SARS-CoV-2 (COVID-19) pandemic, the conference was quickly transitioned to a one-day online format and administered via video communications on March 19, 2020. The newly virtual format allowed for remote participation of attendees. There were 250 viewers total and approximately 80 viewers at any given time during the 6-hour webinar.

Survey Content

This survey asked basic demographic questions such as age, ethnicity, gender, education, and 1st generation college student status. In addition, the online questionnaire (administered via Qualtrics) measured their self-reported knowledge regarding food security initiatives on a global, domestic, campus, and community scale (e.g. farmers markets, food banks, community gardens, food assistance programs, etc.), their intentions to participate in food security initiatives in their

community in the next 6 months, their childhood socioeconomic status, and asked them about their current community involvement (Appendix 1). Participants were given the option to write in a text box the organizations in their community that they were currently involved in. Their intentions within the next six months were measured on a five point Likert scale, ranging from "extremely unlikely," to "extremely likely," on the following items: "participate in community food security efforts," "support ongoing food security efforts," "start a new food security initiative," "influence policies that promote food security," and "participate in advocacy efforts." Participant self-reported knowledge of existing campus, domestic, and global food security initiatives was measured based on a five-point Likert scale with answer choices ranging from "not at all confident," to "extremely confident," in their ability to inform others about various initiatives. Additionally, each participant was able to indicate themselves as a 1st generation college student if applicable to them.

Calculating the relative childhood socioeconomic status of each attendee was approached using an established measure that has shown a strong link between retrospectively reported SES and actual childhood SES in past studies (Hill, Prokosch, DelPriore, Griskevicius, & Kramer, 2016). This measure is based on three Likert-scale items: When thinking about your childhood from birth to 12-years old, please rate how much you agree with the following statements: 1.) "My family had enough money for things growing up." 2.) "I grew up in a relatively wealthy neighborhood." 3.) "I felt relatively wealthy compared to others my age." There were six scale points, ranging from "strongly disagree" to "strongly agree."

Procedure

While attendees were provided the link to the survey 3 days in advance (before the conference), they were able to complete it for up to 3 days after the conclusion of the conference. In total, attendees had nearly a week to participate in the survey.

Analysis

In order to examine the relationships between the categorical demographic characteristics of the sample, a chi-squared test was utilized. The reliability and internal consistency of the Likert-scale-based questions was assessed using Cronbach's Alpha (Appendix 2). The responses from the three childhood SES items were averaged into one number for each participant. The resulting childhood SES variable for each individual had a possible value ranging from 1 (strongly disagree)-6 (strongly agree). For the purpose of interpreting results, childhood socioeconomic status was divided into two groups: low (1.00-3.88) and high (3.89-6), chosen based on the mean (3.88) childhood SES of the current sample.

In order to determine if there are any statistically significant differences between the responses from the low and high childhood SES groups for the participant intentions and knowledge questions, the Likert-scale items were examined using a one-way ANOVA. All analysis was computed using SPSS Statistics software (build 1.0.0.1.1347, IBM Corporation, 2019). Statistical significance was set at $p < 0.05$.

Results

Descriptive Data

The survey yielded 20 unique participants. There were four respondents who did not complete the questionnaire, therefore were excluded from the dataset and the remaining 16 responses were analyzed.

Demographic Variables

The general characteristics of the 16 participants that volunteered to take part in this research are displayed in Table 1. There were 9 individuals grouped into the low childhood SES category, while 7 were grouped in the high childhood SES category. This sample was mostly white females. All survey participants hold some sort of college degree and are employed or in school. The p-value for each of the variable outputs were greater than 0.05, so there were no significant differences between groups.

In the ethnicity category, 75% of the sample reported their ethnicity as White/Caucasian/European American, 18.8% reporting their ethnicity as Asian, and 6.3% reporting their ethnicity as American Indian/Alaskan Native (Table 1). The sample was mostly female (81.30%), with 12.50% reporting male as their gender and one participant preferred not to say. Regarding highest level of education completed, one participant reported having an associate or technical degree, 50.0% of the sample having a bachelor's degree, and 43.80% of the sample having a graduate or professional degree. Half of the sample (50.0%) indicated that they are employed for wages, one participant indicated they are self-employed, 25% are graduate students, 6.3% are undergraduate students, and 12.50% chose to specify their unique employment circumstances, which included 1.) a combination of college student and employed full time, as well as 2.) retired and work part-time.

Table 2 describes the participants intentions to participate in food security initiatives in their community. Between the two SES groups, low childhood SES group indicated more intention to participate in their community in two of the five items, while the high childhood SES group indicated more intention to participate in their community in three of the five items.

Table 1. Demographic Characteristics in Low Childhood SES Group and High Childhood SES Group

	All n=16	Low Childhood SES (n=9)	High Childhood SES (n=7)	*p* value
	Mean (SD)	Mean (SD)	Mean (SD)	
Childhood SES	3.88(1.83)	2.63(1.44)	5.48(0.50)	0.00
Age				
18-35 [n=9(56%)]	36.4(14.4)	41.33(15.26)	30.0(11.06)	0.12
36-70 [n=7(43.75%)]				
	n (%)	n (%)	n (%)	
Ethnicity [a]				
White/Caucasian/European American	12(75%)	7(43.8%)	5(31.3%)	0.487
Asian	3 (18.8%)	1(6.3%)	2(12.5%)	
American Indian/Alaska Native	1(6.3%)	1(6.3%)	0(0.0%)	
Gender				
Female	13(81.30%)	7(43.8%)	6(43.8%)	0.657
Male	2(12.50%)	1(6.3%)	1(6.3%)	
Prefer not to say	1(6.30%)	1(6.3%)	0(0.0%)	
Education [b]				
Associate or Technical degree	1(6.30%)	1(6.3%)	0(0.0%)	0.635
Bachelor's degree	8(50.0%)	4(25.0%)	4(25.0%)	
Graduate or Professional degree	7(43.80%)	4(25%)	3(18.8%)	
Employment [c]				
Employed for wages	8(50%)	6(37.5%)	2(12.5%)	0.144
Self-employed	1(6.30%)	0(0.0%)	1(6.3%)	
Graduate student	4(25%)	1(6.3%)	3(18.8%)	
Undergraduate student	1(6.30%)	0(0.0%)	1(6.3%)	
Other - Specify [d]	2(12.50%)	2(12.50%)	0(0.0%)	

[a] There were no respondents that indicated "Black/African American," "Hispanic/Latinx," "Native Hawaiian/Pacific Islander," or "Middle Eastern/Arab American," as their ethnicity.

[b] There were no respondents that indicated "Less than secondary education," "High school diploma/GED," "Some college with no degree" as their highest level of education completed.

[c] There were no respondents that indicated "Not employed," "Retired," or "Unable to Work," as their current employment status.

[d] "Other" employment was specified as 1.) a combination of college student and employed full time, as well as 2.) retired and work part-time.

The item on the list with the biggest difference in mean scores was the intention to "Influence policies that promote food security on campus, domestic, and/or global scale." For this item, the low childhood SES group indicated a mean intention score of 3.89 ± 0.17, while the high childhood SES group indicated a mean intention score of 4.43 ± 0.79. Both groups scored their intentions to start a new food security initiative in their community lowest, with the low childhood SES group at 3.22 ± 1.48, and the high childhood SES group at 3.14 ± 1.22. "Support ongoing food security efforts in my community through direct or indirect measures" is the subtopic in which the low childhood SES indicated the most intention (4.67 ± 0.71). "Participate in community food security efforts," is the subtopic in which the high childhood SES group showed the most intention (4.71 ± 0.488).

Table 2. One-way ANOVA Results for Intention to Participate in Community Efforts/Organizations Means Grouped by Childhood SES Rank

	Mean ± SD			
In the next 6 months, I intend to…	Total (n=16)	Low Childhood SES (n=9)	High Childhood SES (n=7)	*p* value
…Participate in community food security efforts	4.63 ± 0.62	4.56 ± 0.0.73	4.71 ± 0.488	0.628
…Support ongoing food security efforts in my community through direct or indirect measures	4.63 ± 0.62	4.67 ± 0.71	4.57 ± 0.535	0.772
…Start a new food security initiative in my community	3.19 ± 1.33	3.22 ± 1.48	3.14 ± 1.22	0.910
…Influence policies that promote food security on campus, domestic, and/or global scale	4.13 ± 1.03	3.89 ± 0.17	4.43 ± 0.79	0.312
…Participate in advocacy efforts that promote food security	4.46 ± 0.88	4.22 ± 0.97	4.43 ± 0.98	0.680

Participant knowledge and self-efficacy of informing others were also examined. Table 3 displays participant knowledge on campus food security efforts based on the survey question that asked respondents to rate how confident they felt to inform others about campus efforts to reduce hunger. Except for "Basic Needs," (low SES = 3.67 ± 1.41, high SES = 3.57 ± 1.81), the low childhood SES group indicated a lower confidence in their ability to inform others about all of the various domestic food security initiatives listed compared to the high childhood SES group. Therefore, as the mean childhood SES for participants increased, their indicated ability to confidently explain the items on the list increased as well. According to the one-way ANOVA (Table 3), one item in the existing campus initiatives category was statistically significant: "Food Recovery" ($p=0.048$). In this item, the low childhood SES indicated less knowledge on existing campus food recovery efforts (3.00 ± 1.41) than the high childhood SES group (4.29 ± 0.76).

The item in the list that had the second biggest different in mean scores was "food waste," ($p = 0.061$), with the low childhood SES group indicating this subtopic a mean confidence score of 3.00 ± 1.67, while the high childhood SES group indicated a mean confidence score of 4.43 ± 0.79. "Food recovery" and "food waste," were the subtopics in which the low childhood SES group felt least confident in their knowledge (3.00 ± 1.41 and 3.00 ± 1.67, respectively), while "food pantries" is the subtopic in which the low childhood SES group felt most confident in their knowledge (3.78 ± 1.30). "Mobile pantries," is the subtopic in which the high childhood SES group felt least confident in their knowledge (3.00 ± 1.92), while "food insecurity screening," is the subtopic in which the high childhood SES group felt most confident in their knowledge (4.57 ± 0.54).

Table 3. One-way ANOVA Results for Knowledge of Existing *Campus* Food Security Initiatives Means Grouped by Childhood SES Rank

	Mean ± SD			
	Total (n=16)	Low Childhood SES (n=9)	High Childhood SES (n=7)	*p* value
Advocacy	3.56 ± 1.63	3.22 ± 1.79	4.00 ± 1.41	0.362
Food Pantries	3.88 ± 1.31	3.78 ± 1.30	4.00 ± 1.41	0.749
Mobile Pantries	2.88 ± 1.59	2.78 ± 1.39	3.00 ± 1.92	0.792
Gardens	3.75 ± 1.07	3.33 ± 1.23	4.29 ± 0.49	0.074
Basic Needs	3.63 ± 1.54	3.67 ± 1.41	3.57 ± 1.81	0.907
Food Recovery	3.56 ± 1.32	3.00 ± 1.41	4.29 ± 0.76	0.048*
Food Waste	3.75 ± 1.29	3.00 ± 1.67	4.43 ± 0.79	0.061
Food Insecurity Screening	3.94 ± 1.34	3.44 ± 1.59	4.57 ± 0.54	0.096
Faculty Partnerships	3.63 ± 1.26	3.33 ± 1.50	4.00 ± 0.82	0.309
Private Sector	3.50 ± 1.06	3.44 ± 1.33	3.57 ± 0.79	0.827

* Asterisk indicates a statistically significant difference at $p<0.05$

Table 4 displays the attendees' current knowledge of various domestic food-security/hunger and poverty efforts. The low childhood SES group indicated a higher confidence in their ability to inform others about the various domestic food security initiatives in three of the seven items, while the high childhood SES group indicated a higher confidence in their ability to inform others in four of the seven items. According to the ANOVA, none of the items in the domestic category were statistically significant. However, the item in the list with the biggest difference in means was "underserved communities," ($p = 0.589$), with the low childhood SES

group indicating this subtopic a mean confidence score of 3.67 ± 1.32, while the high childhood SES group indicated a mean confidence score of 4.00 ± 1.00. “Innovative Programs for Reducing Hunger,” is the subtopic in which the low childhood SES group felt least confident in their knowledge (3.22 ± 1.30), while “community collaboration” is the subtopic in which the low childhood SES group felt most confident in their knowledge (3.89 ± 1.27). “Innovative Programs for Reducing Hunger,” is the subtopic in which the high childhood SES group felt least confident in their knowledge (3.14 ± 1.07), while “Underserved Communities,” is the subtopic in which the high childhood SES group felt most confident in their knowledge (4.00 ± 1.00).

Table 4. One-way ANOVA Results for Knowledge of Existing *Domestic* Food Security Initiatives Means Grouped by Childhood SES Rank

	Mean ± SD			
	Total (n=16)	Low Childhood SES (n=9)	High Childhood SES (n=7)	p value
Food Pantries	3.81 ± 1.17	3.78 ± 1.48	3.86 ± 0.69	0.898
Farm to Food Banks	3.44 ± 1.03	3.33 ± 1.12	3.57 ± 0.98	0.662
Domestic Nutrition Education	3.63 ± 1.20	3.67 ± 1.41	3.57 ± 0.98	0.882
Government Supported Programs	3.63 ± 1.31	3.56 ± 1.42	3.71 ± 1.25	0.819
Innovative Programs for Reducing Hunger	3.19 ± 1.17	3.22 ± 1.30	3.14 ± 1.07	0.898
Community Collaboration	3.88 ± 1.15	3.89 ± 1.27	3.86 ± 1.07	0.958
Underserved Communities	3.81 ± 1.17	3.67 ± 1.32	4.00 ± 1.00	0.589

When asked about their knowledge on various global hunger efforts, Table 5, participants in the low childhood SES generally indicated that they were less confident than the group with the higher childhood SES in their ability to explain the items on the list. Therefore, as the mean childhood SES for participants increased, their indicated ability to confidently explain the items on the list increased as well. This comes with the exception of "Humanitarian/Emergency Relief," ($p = 0.658$) where the low childhood SES group indicated a mean confidence score of 3.56 ± 1.24, while the high childhood SES score of 3.29 ± 1.11. According to the ANOVA, all items in the existing global initiatives did not show a statistically significant difference in means. The item with biggest difference in means between SES groups was "Innovative Food Sources/Supply," (p=0.192), with those in the low childhood SES group indicating a mean score of 2.56 ± 1.01, while the high childhood SES group indicated a mean score of 3.29 ± 1.11.

"Innovative Food Sources/Supply," is the subtopic in which the low childhood SES group felt least confident in their knowledge, while "Humanitarian/Emergency Relief," is the subtopic in which the low childhood SES group felt most confident in their knowledge. "Sustainable Development Goals," is the subtopic in which the high childhood SES group felt most confident in their knowledge (3.86 ± 1.22). "Agricultural Practices," "Global Nutrition Education Efforts," "Innovative Food Sources/Supply," "Humanitarian/Emergency Relief," are the subtopics in which the high childhood SES group felt least confident in their knowledge, scoring each of these at a 3.29 ($\pm$ 1.38, $\pm$ 1.11, $\pm$ 1.11, $\pm$ 1.11, respectively).

Table 5. One-way ANOVA Results Knowledge of Existing *Global* Food Security Initiatives Means Grouped by Childhood SES Rank

	Mean ± SD			
	Total (n=16)	Low Childhood SES (n=9)	High Childhood SES (n=7)	*p value*
Agricultural Practices	3.06 ± 1.12	2.89 ± 0.93	3.29 ± 1.38	0.502
Global Nutrition Education Efforts	3.06 ± 1.12	2.89 ± 1.17	3.29 ± 1.11	0.502
Innovative Food Sources/Supply	2.88 ± 1.09	2.56 ± 1.01	3.29 ± 1.11	0.192
Humanitarian/Emergency Relief	3.44 ± 1.15	3.56 ± 1.24	3.29 ± 1.11	0.658
Sustainable Development Goals	3.44 ± 1.32	3.11 ± 1.36	3.86 ± 1.22	0.275
Empowerment of International Communities	3.38 ± 1.26	3.11 ± 1.36	3.71 ± 1.11	0.359

Discussion

The results of this study did not support the prediction, stated earlier, that there would be an observable relationship between childhood socioeconomic status and the intention to participate in community efforts surrounding food security initiatives. This due in large part to the transition of a two-day, in person conference to a one-day webinar with one-fourth the number of speakers, the data collected from these participants is limited. Although the data analysis did not yield significant results, there is much to be learned from this group of participants. This study was able to learn about a small number of attendee intentions, knowledge, and background.

There was a significant difference between the low SES group and high SES group in the mean responses for Campus Food Recovery. This suggests that there may be a potential trend in these variables to explore further in future studies. The general patterns of the current study should be noted. When asked about their intentions to participate in their community within the next 6 months, there were no noticeable patterns or differences in how the low childhood SES group and high childhood SES group responded to the items. However, when asked about their current knowledge of the topics discussed at a typical UFWH Summit, the high childhood SES group exhibited more knowledge on the campus and global scales than the low childhood SES group. As the literature suggested that childhood SES plays a role in the brain development into adulthood and influence personality patterns in later life, this study suggests the need for studies that focus on evaluating the food security and hunger learning objectives at professional conferences that seek to advance population health.

Strengths

Although the study had a small sample size, it provided opportunity to pilot the survey items and test reliability. Despite the small size, all scales, Intentions, Campus Efforts, Domestic Efforts, Global Efforts, and Childhood SES were analyzed for internal consistency using Cronbach's alpha. These ranged from a minimum of 0.80 up to a 0.96, which reflect that the scales are reliable for future use. The next strength of the study is that, although the initial intent was to measure pre- and post-self-efficacy responses to Intentions, Campus Efforts, Domestic Efforts, Global Efforts, and Childhood SES, we now have a baseline values for comparison in future conferences. Some items which scored low among participants such as Global Innovative Food Sources/Supply (2.88 ± 1.09), Domestic Innovative Programs for Reducing Hunger (3.19 ± 1.17), and Campus Mobile Pantries (2.88 ± 1.59), may be used for areas of improvement in future conference planning.

Limitations

Findings of the present study, although not statistically significant, should be considered in light of its limitations. The limitations of the present study included factors such as a small sample size and external validity. The original format of the conference was changed to an online version due to a communicable disease pandemic (COVID-19) occurring during that time, resulting in a lower attendance and therefore a lower number of survey participants (n=16). This resulted in low statistical power of the study. Because the sample size was so small, the difference in means is likely due to chance or sampling error. Data on this subject would need to be collected on a larger scale to see any protentional significant differences in the variable means.

The external validity of the study was compromised due to the sample features of the subjects. All participants attended a virtual conference with the purpose of sharing ideas and learning about campus, domestic, and global hunger efforts. The underlying general interest in public health and community improvement, may be partially responsible for the way the subjects responded to the survey questions. This led to a limited generalizability of the findings to larger populations. The results of this study are also limited by the probability of recall bias on self-reporting. Additionally, there were some participants completed the questionnaire before the conference, some during, and others after the conference had concluded. This potentially led to limited ability to respond to some questions, particularly those whose topics were not covered in the shortened conference.

Recommendations

It is recommended to continue the research into these topics with a larger sample size to understand more about how childhood socioeconomic status may influence intentions in participate in community efforts into adulthood, as well as other intentions or cognitive

characteristics. Additionally, repeating this study and similar studies in advocacy-driven professional development conferences will help us better understand the intentions and interests of individuals that attend these conferences and how to improve said conferences and provides an opportunity on how to increase advocacy skills for public health and participation in the future.

Implications

This study has the potential to contribute additional childhood SES research to the literature. This study also supports the improvement of future conferences by informing future research and serving as a baseline data collection tool for Universities Fighting World Hunger Summits and similar professional meetings. Advocacy has informed policy in many cases in the past – especially in the public health and health education fields. The current study contributed valuable attendee input, including topics they are most knowledgeable about, to future conference planners. A well-organized conference has a unique ability to foster inspiration and create an advocate in attendees. If student- and advocacy-based conferences can be improved, the future of advocacy will be strengthened, and consequently public health policies will have a supportive foundation in the next generations.

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Appendices

Appendix 1: UFWH Survey

Universities Fighting World Hunger - Survey on Perspectives on Addressing Hunger

The purpose of this study is to better understand how a conference focused on addressing hunger and food insecurity influences your confidence in intentions in working towards alleviating this problem. By doing this study, we hope to better understand what strategies are most likely to be used to address hunger and food security. This survey/questionnaire will take about 10-15 minutes to complete.

This survey is being conducted for a Master of Public Health Capstone project. This is a pilot study and the findings will be used for future studies on the Universities Fighting World Hunger (UFWH) Summit. If you have any questions, you can contact me, Liana Dixon, liana.dixon@uky.edu or julieplasencia@uky.edu.

Please list any organizations you are currently involved in that focus on addressing food security, hunger, nutrition and/or food. If you are currently not involved, please type "none."

_____

_____

_____

_____

Please answer the following questions regarding **how likely or unlikely it is that you will take these actions** in the next 6 months:

I intend to...

	Extremely Unlikely (1)	Unlikely (2)	Somewhat Likely (3)	Likely (4)	Extremely Likely (5)
participate in community food security efforts.	○	○	○	○	○
support on-going food security efforts in my community through direct or indirect measures (e.g. working, volunteering, giving donations, raising awareness, etc.	○	○	○	○	○
start a new food security initiative in my community.	○	○	○	○	○
influence policies that promote food security on campus, domestic, and/or global scale.	○	○	○	○	○
participate in advocacy efforts that promote food security.	○	○	○	○	○

Select the option that best describes how confident you feel to inform others about the following **CAMPUS** efforts to reduce hunger:

	Not at all Confident (3)	Not Confident (2)	Somewhat Confident (1)	Confident (4)	Extremely Confident (5)
Advocacy	○	○	○	○	○
Food Pantries	○	○	○	○	○
Mobile Pantries	○	○	○	○	○
Gardens	○	○	○	○	○
Basic Needs	○	○	○	○	○
Food Recovery	○	○	○	○	○
Food Waste	○	○	○	○	○
Food Insecurity Screening	○	○	○	○	○
Faculty Partnerships	○	○	○	○	○
Private Sector	○	○	○	○	○

Select the option that best describes how confident you feel to inform others about the following **DOMESTIC** efforts to reduce hunger:

	Not at all Confident (1)	Not Confident (2)	Somewhat Confident (3)	Confident (4)	Extremely Confident (5)
Food pantries	○	○	○	○	○
Farm to Food Banks	○	○	○	○	○
Domestic Nutrition Education	○	○	○	○	○
Government Supported Programs (e.g. Supplement Nutrition Assistance Program (SNAP), formerly known as food stamps, Women Infants Children (WIC), etc.)	○	○	○	○	○
Innovative Programs for Reducing Hunger (e.g. technology, new/non-traditional settings, etc.)	○	○	○	○	○
Community Collaboration	○	○	○	○	○
Reducing Hunger and Poverty among Underserved Communities	○	○	○	○	○

Select the option that best describes how <u>confident</u> you feel to inform others about the following **<u>GLOBAL</u>** efforts to reduce hunger:

	Not at all Confident (1)	Not Confident (2)	Somewhat Confident (3)	Confident (4)	Extremely Confident (5)
Agricultural Practices	○	○	○	○	○
Global Nutrition Education Efforts	○	○	○	○	○
Innovative Food Sources/Supply (e.g. technology, alternative methods, etc.)	○	○	○	○	○
Humanitarian/Emergency Food Relief	○	○	○	○	○
Sustainable Development Goals (SDG)	○	○	○	○	○
Empowerment of International Communities	○	○	○	○	○

When thinking about your childhood from birth to age 12, please rate how much you agree or disagree with the following statements:

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Somewhat Agree (4)	Agree (5)	Strongly Agree (6)
My family had enough money for things growing up.	○	○	○	○	○	○
I grew up in a relatively wealthy neighborhood.	○	○	○	○	○	○
I felt relatively wealthy compared to others my age.	○	○	○	○	○	○

What is your current employment status?

- ○ Self-Employed
- ○ Employed for Wages
- ○ Not Employed but Looking for Work
- ○ Undergraduate Student
- ○ Graduate Student
- ○ Retired
- ○ Unable to Work
- ○ Other, please specify _____

What is the highest level of education you have completed?

- ○ Less than 12 years or less than secondary education
- ○ High school or General Educational Development (Completed secondary education or 12 years)
- ○ Some college with no degree
- ○ Associate or technical degree (2-year post-secondary)
- ○ Bachelor's degree (4-year post-secondary)
- ○ Graduate or professional degree (master's degree, doctoral degree, juris doctor, etc.)

Were or are you a first-generation college student? In other words, your parent(s)/legal guardian(s) did not complete a bachelor's degree.

- ○ Yes
- ○ No
- ○ Not Sure
- ○ Prefer not to answer
- ○ Does not apply to me

Using the categories below, what ethnicity do you identify with? Choose one or more.

- ☐ Hispanic/Latino (including Mexican, Mexican American, Chicano, Puerto Rican, Cuban)
- ☐ White/Caucasian/European American
- ☐ Black/African American
- ☐ American Indian/Alaska Native
- ☐ Asian (Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, or other Asian)
- ☐ Native Hawaiian/Pacific Islander
- ☐ Arab American/Middle Eastern
- ☐ Other, specify: _____
- ☐ Prefer not to answer

To which gender identity do you most identify?

- ○ Female
- ○ Male
- ○ Non-binary/ third gender
- ○ Prefer to self-describe _____
- ○ Prefer Not to Say

What country are you from?

- ○ United States - Please provide your zip code: _____
- ○ Canada
- ○ Other - Please Specify: _____

In what year were you born?
_____

What is your reason for attending the virtual 2020 Universities Fighting World Hunger Summit?

- ☐ ~~Professional interest (4)~~
- ☐ ~~To present my ideas or work to others (5)~~
- ☐ ~~To network (6)~~
- ☐ ~~To expand my knowledge and find solutions to problems (7)~~
- ☐ ~~To gain inspiration (8)~~
- ☐ Other (9) _____

Appendix 2: Reliability and Internal Consistency of Survey Scales

Reliability of Scales and Items

	Number of Scale Items	Cronbach's Alpha
Intentions	5	0.82
Campus Efforts	10	0.8
Domestic Efforts	7	0.96
Global Efforts	6	0.93
Childhood SES	3	0.94